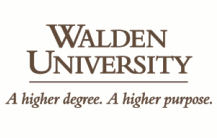

2017

Effect of Public and Private Preschool Attendance on Kindergarten Literacy

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This is to certify that the doctoral study by

Matthew Garofolo

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2017

Abstract

Effect of Public and Private Preschool Attendance on Kindergarten Literacy

by

Matthew S. Garofolo

MA, University of Phoenix, 2009

BS, Ramapo College of New Jersey, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

November 2018

Abstract

Students who enter kindergarten lacking readiness skills often struggle to meet literacy benchmarks and to successfully complete school. The problem to be investigated by this study is the low literacy scores on the standardized Fountas and Pinnell Benchmark Assessment test at 2 public New Jersey elementary schools. While some students attended public or private preschools, others did not attend any preschool prior to starting kindergarten. The purpose of this quantitative study was to determine the difference in kindergarten literacy gain scores among students who attended public, private, and no preschool. Vygotsky's sociocultural theory and emergent literacy theory served as the theoretical foundation for this study. The study followed an ex post facto 1 x 3 factorial design. Analysis of variance was conducted using an archived data set that included pre- and posttest kindergarten literacy scores for 100 kindergarten students accounting for approximately 15% of the school district's total kindergarten population. The results showed a statistically significant difference for both the public and private preschool group compared to the no preschool group. Student achievement between the pre- and posttest increased the greatest for the public preschool attendance group. Results inform families' early childcare decisions, empower policy makers seeking early intervention, and contribute to the growing body of research acknowledging the positive effects of preschool attendance.

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Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Education in the United States has experienced an academic shift towards higher expectations across all grade levels. In 1983, Chall identified grade level stages for reading development. The first stage is student mastery of letter-sound recognition and decoding one and two syllable words (Chall, 1983). In the past, early education policy makers believed this stage was developmentally appropriate for first grade students and mastery was not expected until second grade (Chall, 1983). Three decades later, policy makers now believe kindergarten-aged students should be ready to master this first stage of literacy and, in addition, have the ability to read emergent stories for fluency and comprehension (Hiebert & Pearson, 2013). Because kindergarten is the only grade level that does not require academic perquisites for entry, such as preschool attendance, I studied the effect of preschool attendance or lack of preschool attendance on kindergarten literacy achievement. I do so to better inform families regarding early childcare decisions, to empower policy makers seeking early intervention strategies to boost academic skills, and to contribute to the growing body of research acknowledging the positive effects of preschool attendance.

In Chapter 1, I discuss early literacy achievements in the United States more generally, in the state of New Jersey, as well as via comparison to one school district in New Jersey, as well as a two elementary schools in that district. Characteristics of New Jersey's preschool programs are introduced to frame a local problem that may exist and support the development of the study's research question. I explain my theoretical framework, guided an exhaustive literature review. I provide a list of terms to ensure

comprehension of variables. I explain my assumptions regarding this study, and include a brief discussion of the population selected. I conclude by addressing the study's weaknesses, and posit opportunities to promote positive social change.

Background

Students that entered kindergarten with limited knowledge of the alphabet have difficulty achieving literacy benchmarks (Alvarez, 2015). A positive relationship exists between early childhood literacy instruction and later school success, however often kindergarten aged students begin school lacking academic foundations and readiness skills required to meet literacy benchmarks (Schryer, Sloat, & Letourneau, 2015) even though early literacy development begins at birth (Özdemir & Bayraktar, 2015). There are risks in being unprepared for kindergarten because if fundamental literacy skills remain unattended, the probability for not completing high school, maintaining employment, and dependency on welfare programs or crime increases (Barnett, 2008). The National Center for Educational Statistics (2013) noted 66% of all United States fourth-grade students scored below proficient in math and reading. Results from National Center for Education Statistics (2013) reported 17-year-olds average reading scores have not significantly improved since the 1970s.

The scale of illiteracy is a significant concern.The World Literacy Foundation (2015) found the cost of illiteracy in the United States is approximately 2% of the GDP or $362 billion dollars per year due to tax revenue loss from unemployment, and increased stress to the criminal justice system. Globally there are approximately 774 million illiterate adults (United Nations Educational Scientific and Cultural Organization, 2015).

Nationally the United States is estimated to have 45 million adults reading at an elementary school level (National Institute for Literacy, 2015; The Literacy Company, 2015; United States Census Bureau, 2015a).

Problem Statement

Very little research has been done to determine if preschool attendance affects kindergarten literacy scores, but literacy benchmarks among Kindergarteners in the United States show that a majority of kindergarteners need literacy assistance. Fountas and Pinnell's (2015) Instructional Level Expectations for Reading Chart and Key, by the end of the kindergarten school year, students achieving an independent reading level of D-E met expectations, while a C signifies approaching expectations and short-term intervention is suggested. Scores below C are thought to require intervention. Figure 1 illustrates Spring 2014-2015 literacy scores for all kindergarten students from site 1.

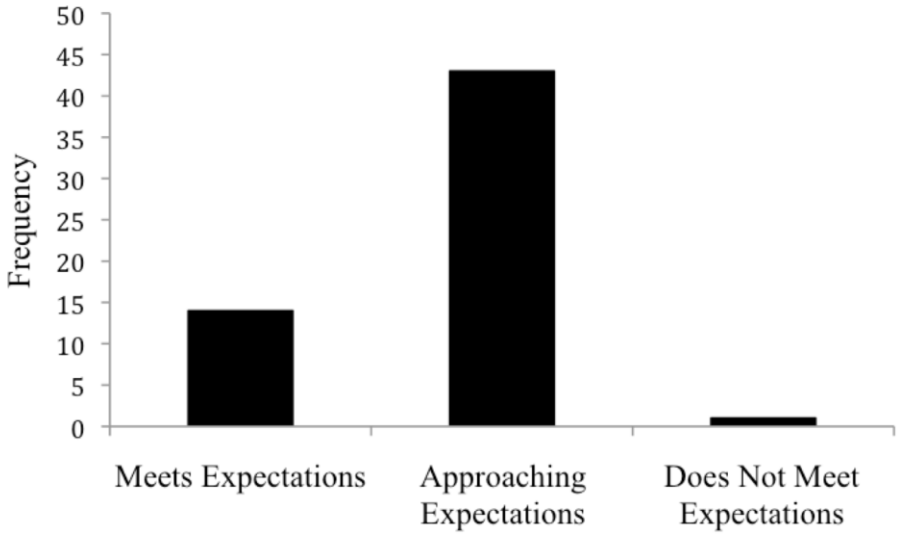

Figure 1. Kindergarten literacy scores. Adapted from "Spring 2015-2016 Kindergarten Fountas & Pinnell Benchmark Assessment scores" by school district, 2017.

The Partnership for Assessment of Readiness for College and Careers is a standardized test administered to approximately 826,000 students from Grades 3-11 was administered at all New Jersey public schools for 2015 and 2016 (Partnership for Assessment of Readinesss for College and Careers, 2016). The Partnership for Assessment of Readiness for College and Careers (PARCC) was designed to replace and standardize nationwide high stakes assessments (Partnership for Assessment of Readiness for College and Careers , 2016). Table 1 represents results from all New Jersey public elementary schools that participated in the Spring 2015 and 2016 PARCC English Language Arts assessment. Results from statewide PARCC assessments suggest the majority of New Jersey students have, or are approaching, literacy benchmarks by 3rd, 4th, and 5th grade.

Table 1

Spring 2015 and Spring 2016 PARCC Language Arts Measures of Meeting Expectations for all Participating Districts in New Jersey Represented as Percentages

Grade	Not Met		Partial		Approaching		Met		Exceeded	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Third	15	14	18	16	24	23	39	41	5	6
Fourth	8	8	15	14	27	25	39	41	12	13
Fifth	7	7	15	15	26	25	45	46	6	7

Note. Adapted from "PARCC Results" by district website, 2017. In the public domain.

Table 2 represents English Language Arts PARCC results for all elementary schools within the district where I identified my sample. Results indicate the district performed above New Jersey's average, with more than 50% of participants meeting expectations. A comparison of the 2015-2016 kindergarten literacy scores and District PARCC English Language Arts scores could suggest a gap in practice may exist during early childhood education.

Table 2

Spring 2015 and Spring 2016 PARCC Language Arts Measures of Meeting Expectations for Entire District Represented as Percentages

Grades	Not Met		Partial		Approaching		Met		Exceeded	
	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
Third	5	5	14	12	26	26	50	50	5	7
Fourth	2	2	7	8	24	24	51	52	15	15
Fifth	2	3	8	8	27	25	58	58	5	7

Note. Adapted from "PARCC Results" by district website. In the public domain.

In the United States, public preschool programs were initially developed to lessen the demand for costly special services later in life by providing early intervention to disadvantaged students. Fortunately, its effect has been generalized to larger populations convincing policy makers in some states to mandate universal programs to all students (Gomez-Velez, 2013; Lamy, 2013). Universal preschool is government funded early childhood education for all regardless of previously qualifying characteristics, such as economic status or disability (Curran, 2015).

The cultural acceptance of preschool at the state level began with the 1998 Abbott v. Burke New Jersey Supreme Court decision which ruled all low-income school districts must provide early childhood programs (State of New Jersey Department of Education, 2014a). In 2008, New Jersey adopted the School Funding Reform Act, with the goal of creating 84 additional preschool programs in high poverty districts. However, Governor Christie's 2016 budget has not included this expansion (Castano, 2014). In 2013, New Jersey received a Race to the Top funding to support alignment of Common Core

Standards from Grades P-3 (State of New Jersey Department of Education, Department of Early Childhood Education, 2015; United States Department of Education, Office of Early Learning, 2017). Initially, Common Core Standards were developed to ensure students leave k-12 schools prepared for work or college (Zubrzycki, 2011). However, these standards have created challenges for preschool educators. For the 46 states that have chosen to adopt k-12 Common Core Standards, they must also independently develop preschool guidelines that balance rigorous academics while maintaining the development needs of young children such as play, arts, and social skills (Zubrzycki, 2011).

The preschool experience can vary considerably in New Jersey. Public preschool teachers must hold an New Jersey teaching certification in their area of instruction and have completed college level training and a student teaching practicum. However, private preschool centers may only require staff to have subject area experience. Public preschool programs must adhere to state guidelines, curriculum standards, and assessments. Privatized preschool curriculum is not state regulated. New Jersey public preschool enrollment is limited to small class sizes. It is the discretion of privatized preschool centers to determine class sizes. The Individuals with Disabilities Education Act (IDEA) mandate New Jersey public preschool programs must provide special services for all students with individual learning plans (United States Department of Education, 2008). Under IDEA, students with identified learning disabilities attending private preschool are not guaranteed individualized special services (United States

Department of Education, 2008). Private preschool centers reserve the right to have a selective admission process.

For this study, I chose sites that are Title I schools. Title I schools receive additional state funding to assist in providing free preschool education for students that have individual educational learning plans (IEP) or meet low-income criteria. Public preschool programs close achievement gaps before entry into primary school by providing fundamental academic and social skills training in addition to special services such as speech, occupational, and physical therapy (United States Department of Education, 2012). The majority of New Jersey's population is middle class families that are ineligible for state funded preschool. An Internet search for preschool centers within 5 square miles of Site 1's community revealed approximately 67 locations (GreatSchools, 2016).

Limitations of current cultural acceptance of early childhood in the United States are that there is no academic prerequisite for demonstrating kindergarten readiness. Preschool attendance is not mandated and largely only available to students classified as at risk. Students of low-income families are often the focus of educational research, which is the spearhead of promoting social change. Barnett and Frede (2010) noted middle-class students more commonly enter kindergarten with poor readiness skills due to a lack of quality preschool attendance. Nationally, 53% of United States households and 44.8% of New Jersey's over 3 million households were middle-class (Mele, 2010; United States Census Bureau, 2015b). Unfilled preschool seats are then made available to the public through a lottery system, however families must pay to play. All k-12 public

schools provide curriculum aligned to New Jersey Common Core Standards. Although all New Jersey public preschool programs use modified academic standards aligned to New Jersey Common Core, it is not a requirement for private preschool.

It is unclear how students entering kindergarten are affected by preschool attendance. However, based on the information I provided above regarding literacy outcomes at various levels, a gap may exist at the early childhood level suggesting preschool attendance matters in relation to literacy outcomes of kindergarteners.

Purpose of the Study

The purpose of this study was to determine if preschool attendance effects kindergarten literacy development. A quantitative design compared kindergarten literacy scores with type of preschool attended to determine whether a statistical significant difference existed between groups. The independent variable was type of preschool attended and included three groups (public, private, and no preschool). The dependent variable was kindergarten literacy gain scores.

Research Question and Hypothesis

What is the difference in Kindergarten literacy gain scores as measured by the Fountas and Pinnell Benchmark Assessment between students who attended public, private, and no preschool?

H_0*:* There is no difference in kindergarten literacy gain scores as measured by the Fountas and Pinnell Benchmark Assessment between students who attended public, private, and no preschool.

$H_{1:}$ Students who attended preschool show higher kindergarten literacy gain scores as measured by the Fountas and Pinnell Benchmark Assessment then students who did not.

Theoretical Framework for the Study

Vygotsky's (1978) sociocultural theory and emergent literacy theory served as the foundation for this study. Sociocultural theory suggested children develop cognitive functions on a social level through adult interactions, which are later internalized to create personal meaning (Vygotsky, 1978). Teal and Sulzby (1986) defined emergent literacy as a period during early childhood where students' literacy skills evolve during adult guided interactions using oral and written language (Doyle, 2013; Gunn, Simmons, Kameenui, 2004; Kennedy et al., 2012). Sociocultural theory and emergent literacy theory build upon the body of research related to early childhood literacy development by suggesting students learn cultural tools such as reading, writing, and oral communication through adult interactions and interpretations (Bruner, 1967; Luria, 1982; Vygotsky, 1978). In the next chapter, I expand on the relevance of these theories and further discuss their role in the development of the study.

Nature of the Study

The lack of random assignment and manipulation of treatment merited the use of a quasi-experimental design (Belli, 2009). The study's reliance on archived data for three groups that have already received a treatment validated the use of an ex-post facto 1 x 3 factorial design. The use of a true experimental design in this study was not possible due to the fact the treatment has already occurred (Lord, 1973). The study used an archived

data set from the 2016-2017 school year. The independent variable was preschool attendance and had three groups: public, private, and no preschool. The dependent variable was kindergarten literacy gain scores.

Definitions

The following terms were defined to develop a stronger understanding of this study.

Early childhood educators: Teachers of 3 to 4-year-old students or younger (Harrison, Goldfeld, Metcalf, & Moore, 2013).

Early education at-risk students: Students described as statistically more likely to underperform based on demonstrating defined criteria (McGee & Dail, 2013). Criteria that often associate students are: ethnicity, having a learning disability, handicapped, or low socioeconomic status (McGee & Dail, 2013).

Early Learning: Readiness skills that students between the ages of 3-5 are expected to know before entering kindergarten (Harrison et al., 2012).

Emergent Literacy: Prerequisite skills for reading and writing instruction (Whitehurst & Lonigan, 1998).

Kindergarten Readiness: A developmental level where students are prepared to learn new skills by following directions, sit attentively, take turns, participate, and finish age appropriate tasks (Hull, 2012).

Literacy: Students' ability to read, write, and critically think to gain knowledge (Beaver, 2015).

Preschool: A licensed educational center or school-based classroom that provides prerequisite academics and social skills necessary for transition to kindergarten (Ackerman, Barnett, Hawkinson, Brown, & McGonigle, 2009).

Title I preschool: A preschool program that receives additional state funding to support academic, social, and physical development free of charge to students with individualized educational plans, or meets low-income criteria (United States Department of Education, 2012)

Universal preschool: Voluntary free public preschool to all students regardless of income or eligibility criteria (Ackerman et al., 2009).

Assumptions

It is assumed the procedures for administering and completing the assessment were followed and students' reading scores reflect an accurate picture of their independent reading level. In addition, students who attended a New Jersey public preschool received literacy instruction aligned to Common Core Standards from certified staff in a half-day environment. Students who attended private preschool may have received literacy instruction not aligned to Common Core Standards in either a half-day or full-day environment. Private preschool staff may not possess an early childhood degree or an New Jersey teaching certification.

Scope and Delimitations

The study focused on determining if there is a statistical significant difference in kindergarten literacy gain scores between students with public, private, or no preschool experience. Currently, the effect of preschool attendance on kindergarten literacy

attainment is unknown at the sites. The study was limited to a total sample size of 100 kindergarten students from the 2016-2017 school year. The sample size represents approximately 15% of all kindergarten students in the district and represents 100% of students from two sites. The sites selected shared characteristics with other schools in the district concerning demographics, kindergarten population size, proximity, curriculum, and assessments. Vygotsky's sociocultural theory and emergent literacy theory are relevant to this study and explain how early childhood students learn cultural tools such as reading and writing skills. This study's results can be generalized to other kindergarten populations that follow similar curriculum guidelines and Common Core Standards.

Limitations

Creswell (2013) discussed limitations as elements of a study the researchers has no control over. Matching was used to assign participants into three groups that shared the criteria of public, private, and no preschool attendance to control for confounding variables. Limitations of study were:

- Data set was limited to a single year.
- Sample size was limited to 15% of total population.
- Data analysis only compared preschool attendance with kindergarten literacy gain scores.

Significance

Early childhood education is a relevant topic for public elementary schools in the United States (Duncan, 2013b). Regardless of states' stances on providing universal preschool, funding remains a roadblock to the advancement of early childhood programs

regardless of overwhelming data documenting both short and long-term benefits (Dutton, 2012). Common Core State Standards (2016a) have increased the accountability of public schools and kindergarten educators. Preschool standards ensure educators are preparing students to learn in kindergarten (Dutton, 2012). Past research indicates that waiting to teach phonemic awareness, and decoding skills until students enter kindergarten can be too late to guarantee a higher rate of mastery for all students in first grade (Juel, 2006). Currently, New Jersey does not offer universal preschool. Furthermore, the curriculum and staffing of private preschool programs are not regulated. In this study, I promote positive social change by identifying a statistically significant difference exists among kindergarten literacy gain scores between students that attended public, private, or no preschool. Findings could a) support more accurate classroom placement for future kindergarteners, b) inform families struggling with early childcare decisions, and c) support policy makers seeking early intervention to reduce a growing demand for higher grade level special services.

Summary

Literacy scores indicated kindergarten students might struggle to meet expectations. Poor literacy skills are a national concern and if left unattended can negatively affect academic careers and quality of life. Current literacy scores from all public New Jersey schools suggest approximately 50% of students are meeting expectations by 3rd grade. A comparison of assessments indicated a gap in practice might exist during early childhood education. Furthermore, the recent alignment of k-12 Common Core Standards to New Jersey's public preschool programs has raised academic

rigor and school accountability. More than 50% of New Jersey preschool aged children do not have access to a public preschool education. New Jersey offers many exceptional private preschool programs. However, private preschool curriculum and staffing are not regulated, making it difficult to assess the quality of their curriculum. In this quantitative study I examined the effect of public, private, or no preschool attendance on kindergarten literacy gain scores to determine if there is a statically significant difference. I developed a research question and hypotheses to measure the effect of preschool attendance on literacy assessment in kindergarten. Due to the the study's reliance on archived data, a quasi-experimental design was appropriate. I have defined terms associated with the study's variables, provided assumptions understood to be true in addition to discussing the study's scope and delimitations. Results could be generlized to simular populations to promote positive change. In Chapter 2, I discussthe study's theoretical foundation and present a literature review of the current research related to study variables.

Chapter 2: Literature Review

At a public elementary school in New Jersey, it is unclear if preschool attendance affects kindergarten literacy scores. The purpose of this quantitative study was to determine the difference between kindergarten literacy gain scores among students who attended public, private, or no preschool. A heightened awareness of the benefits of early childhood development has many administrators, educators, and policymakers across the nation seeking to utilize preschool as an intervention to assist all young learners to achieve early school success (Ackerman et al., 2009). In this literature review, I explore the stages of early childhood development and how it influences literacy development. I also review legislation and findings from peer-reviewed sources on relevant early childhood programs in order generalize results and uncover limitations that would validate a need for further research. Finally, I discuss how the conceptual framework of sociocultural theory relates toemergent literacy theory to better understand the role of school-based instruction.

Literature Search Strategy

The library databases I accessed to achieve research saturation were EBSCOhost: ERIC, ProQuest Central, Thoreau: search multiple databases, Education Research Complete, and Academic Search Complete. Rearch utilized the search terms: *early childhood development, universal preschool, literacy development,* and *kindergarten readiness*. The government website census.gov was used to obtain data on national and state level demographics and populations. Research used the keywords: *upper, middle,* and *below the poverty line*. The United Nations Educational Scientific and Cultural

Organization and National Assessment of Adult Literacy provided data for literacy rates, benchmark reading scores, and illiteracy. My initial scope of this literature review was from peer-reviewed sources dated from 2013-current. However, identifying primary sources required multiple database searches, with access to all dates available. I reference checked the sources I used to achieve research saturation. Often this method required the use of Google Scholar to access full versions of documents. In the case of limited or no peer-reviewed research internet searches provided me access to articles, which I then reference checked to obtain original sources.

Theoretical Foundation

Sociocultural Theory

Vygotsky (1978, 1994) published many works on sociocultural theory with later translations summarizing his substantial contributions to constructivism. He held a strong conviction that, "human learning presupposes a specific nature and a process by which children grow into the intellectual life of those around them" (Vygotsky, 1978). A recent contribution by Smagorinsky, Hansen, and Fink (2013) interpreted his words to mean that a learner's emotions inspire thoughts, which in turn creates new knowledge. Humans are inherently social beings that coexist with others by sharing similar cultural values. Although the diversity of communities around the world can vary greatly they all share the needs for common sociocultural learning in order to live, grow, and prosper. These learning needs are not exclusive and extend to all students (Shireen, 2014). For this study, I use Vygotsky's sociocultural theory to better understand why and how young children learn literacy skills by participating in adult organized culturally appropriate interactions

and independent practice during loosely structured social interactions with peers (Vygotsky, 1978, 1989).

According to sociocultural theory, social interaction is a cultural activity people use to create new knowledge (Nel, 2016). Stage 1 is when children internalize cognitive functions during two stages. Stage 2 is when children interact with a knowledgeable adult they reflect on the experience and then develop personal meaning regarding that experience (Vygotsky, 1978). Later, Vygotsky expanded the characteristics of sociocultural theory into (a) understanding the role of interactions on cognitive development, (b) identifying a zone of proximal development, and (c) classifying the more knowledgeable other (1978). In much of Vygotsky's research on human development, he sought to understand the role social interactions played in teaching people about cultural tools for communicating knowledge (Smagorinsky, Hansen, & Fink, 2013). He accepted natural progression, however, believed that in order to learn advanced cultural tools, such as literacy, students required structured academic instruction within their zone of proximal development (Barnes, 2016).

Vygotsky (1978) theorized that social interactions between children and adults, using oral and written language within the context of their culture, influences cognitive development. More specifically, I use Vygotsky's sociocultural theory to understand how early childhood students require classroom interaction during guided learning activities within their zone of proximal development to develop literacy skills. Dorn (1996) explains this process as introducing a cognitive function to young students through social interactions with an adult. Next, the child internalizes the cognitive function by revisiting

the experience during a less structured activity (Dorn, 1996). Vygotsky (1978) conceptualized this role as inter and intra-psychological functioning, where social interactions support children developing problem-solving skills as they move from other regulatory (external) to self-regulatory (internal) behaviors (Dorn, 1998). Interactions with intelligent adults are required for young children to develop balanced self-regulated thought (Chang-Wells, & Wells, 1993; Dorn, 1998; Forman, Minick, & Stone, 1993; Newman, Griffin, & Cole, 1993; Rogoff, 1990).

Vygotsky suggested an individual zone of potential or higher level of thinking is achievable with guidance or scaffolding from a more knowledgeable adult or peer (Gauvain & Cole, 1997; Smagorinsky, Hansen, & Fink, 2013). However, successful implementation requires the educator to consider learners' prior knowledge, cultural background, the level of experience teaching the new skill, confirming individuals' roles in the activity and purpose of learning a new intellectual function (Smagorinsky et al., 2013). The more knowledgeable other plays an instrumental component in Vygotsky's sociocultural theory. He defines the role as an educator with a greater understanding of the process of teaching an intellectual function to the learner (Cicconi, 2014). Vygotsky's sociocultural theory is fundamental to early childhood literacy instruction. Its ideals are founded on the basis that children learn while participating in adult interactions and creating interpretations to learn cultural tools (Bruner, 1967; Luria, 1982; Vygotsky, 1978).

Emergent Literacy Theory

Scaffolding on the work of Vygotsky, the theory of emergent literacy hypothesizes that early childhood literacy develops during student interactions with adults while using cultural tools such as reading, writing and oral communication (Williams, 2004). Emergent literacy describes the process of early childhood reading and writing instruction hypothesizing that social interactions with adults, in the form of written or oral language, aides in the development of early childhood literacy skills (Williams, 2004). Clay's (1966, 1967) research on early childhood students' performance in reading and writing tasks marks the introduction of emergent literacy theory. Teale and Sulzby (1986) first operationalized the term emergent literacy as a period between ages of 3-8 where reading and written skills develop through recognition of students' culture, participation in oral and written language activities, and adult interactions. Sulzby and Teale (1991) later clarified the concept of emergent literacy as reading and writing behaviors preceding phonics instruction.

Today many researchers have defined emergent literacy is a period during childhood development where reading and writing development coexist during participation in oral and written language experiences that utilize elements of students' culture (Doyle, 2013; Gunn et al., 2004; Kennedy et al., 2012). The major themes of emergent literacy research focus on written and oral language. Concepts about letters, text, and phonemic awareness develop as preschool students experience written language through listening to stories and daily routines (Gunn et al., 2004). Preschool students develop listening comprehension, vocabulary, and the ability to communicate complete

thoughts through experiences with oral language at home and school (Gunn et al., 2004). In addition, letter identification and sound awareness represent fundamental emergent literacy skills essential for kindergarten readiness that must not be neglected during their preschool years (Strang & Pliasta, 2016). Insufficient experience with either concept leads to later poor literacy development (Copeland & Edwards, 1990; Gunn et al., 2004; Mason & Allen, 1986; Smith, 1989).

Sociocultural theory and emergent literacy theory is significant to the population and purpose of my study. Both theories are dependent upon students' cultural learning needs and are a hallmark of early childhood curriculums around the world (Bruner, 1967; Luria, 1982; Vygotsky, 1978; Wildschut et al., 2015).

Literature Review Related to Key Concepts and Variables

Early Childhood Brain Development

The growth rate of children's brains reaches near full development by kindergarten (Child Welfare Information Gateway, 2009). Piaget (1937) theorized the preoperational period occurring between the ages of two and seven. At this time cognitive functions related to oral and written language comprehension begin to develop.(Piaget, 1937; Ultanir, 2012). In addition, episodic memory, the ability to recall experiences begins to develop between the age of three and four (Riggins, Blankenship, Mulligan, Rice, & Redcay, 2015). A follow up study found instruction intergrated with music helped preschool aged children retain new information longer then without (Moreno, Lee, Janus, & Bialystok, 2015). Another aspect of early brain development involves play. Play allows young children to develop schemas about the world around them including

knowledge about print (Atherton & Nutbrown, 2015). Due to these developmental processes, preschool has a significant role in children's cognitive development (Camilli, Vargas, Ryan, & Barnett, 2010).

The principles of early childhood brain development state that growth is continuous; positive emotions promote learning and require experiences with real life problem solving (Rushton, 2011). However, Frey and Fisher (2010) noted regardless of the brain's ability to continuously grow, reading is not a natural progression and requires instruction. Consequently, Bartik (2011) found three year olds from high socio-economic backgrounds knew an average of 350 more words than middle income students and 680 more words than at or below poverty line students with a total vocabulary size of 1,100 words. One reason for a discrepancy is families with higher incomes participate more in their child's education (Tabors, Snow, & Dickinson, 2001).

Parent Involvement

Parental involvement plays a major role in children's readiness to begin and succeed in school (Lui & Channel, 2015). Parent involvement promotes children's desire to enter post-secondary education (Epstein & Dauber, 1991; Zellman & Waterman, 1998). Henderson and Berla's (1994) analysis of 66 previous studies on the effects of parent involvement reported that parental involvement correlates to student achievement. Dove, Neuharth-Pritchett, Wright, and Wallinga (2015) studied approximately 3,000 United States kindergarteners and found that students' who experienced consistent parental involvement produced higher literacy scores (Dove et al., 2015). Preschool aged students experiencing high levels of adult interactions while using advanced vocabulary

can predict later school success (Hart & Risley, 1995; Lui & Channel, 2015; Rowe, Raudenush & Golden-Meadow, 2012).

Role of Play and Literacy Instruction

In recent years, preschool curriculum has shifted from play-based to academic programs (Hatcher, Nuner, & Paulsel, 2012). The play theorist, Sutton-Smith (1995) operationalized play as a "medium for propaganda for one propaedeutic sort or another," meaning that play is an introduction to learning something meaningful (Roskos & Christie, 2011). Jones and Reynolds (2011) pointed out a link between early childhood play and methods used by scientists during inquiry-based research to explore "what if?" variables. Researchers acknowledge that the act of play can support literacy development (Pellegrini, 1984; Piaget, 1962; Roskos, & Christie, 2011; Smith, 2010; Vygotsky, 1976). Almon (2013) observed that play supports learning values. Fundamentally, play requires adults to provide repetitive, loose structure, voluntary activities, within a comfortable environment (Almon, 2013). Almon (2013) also noted the unstructured nature of play makes assessing academic skills difficult due to unpredictable outcomes. However, Chien et al. (2010) studied the effects of play on preschool educational outcomes and found increased instruction time and decreased free play produced greater academic growth and readiness for kindergarten. Therefore, the value of play requires some comprimise and thoughtful intergartation into literacy instruction (Almon, 2013).

Likened to play, literacy has multiple interpretations. Roskos and Christie (2011) believed literacy's definition could vary significantly from creating meaning through different media to developing knowledge about concepts. Roskos and Christie (2011)

reported state funded preschool literacy instruction created an academic foundation for later reading and writing development. Piaget (1962, 1964) and Wolfgang and Sanders (1981) aid researchers in understanding the relationship between play and literacy development (Roskos, & Christie, 2011). For example, Piaget (1962) posited that play provides opportunities for preschool aged children to practice new skills (Roskos & Christie, 2011).

Roskos and Christie (2011) interpreted the role of play in Vygotsky's theory of zone of proximal development, as an instrumental tool for enhances children's motor, cognitive, and emotional skills. Roskos and Christie (2011) suggested the characteristics of play have further implications on early children's language development as it bridges a gap between their representational abilities and literacy skills. Although the zone of proximal development requires adult assistance to learn advanced concepts, Roskos and Christie (2011) noted Vygotsky believed young children use play as a "self-help" tool. Play allows young children to practice literacy skills in unstructured relaxed activities, develop meanings for words and practice their use to convey needs or wants (Roskos & Christie, 2011). Vygotsky (1978) believed play was an integral aspect of early childhood learning:

> In play a child is always above his average, above his daily behavior; in play, it is as though he were a head taller than himself. As in the focus of a magnifying glass, play contains all developmental tendencies in a condensed form; in play, it is as though the child were trying to jump above the level of his normal behavior. (p. 102)

Results of Heppner's (2016) qualitative study of 71 preschool students on play based literacy centers further expanded on Vygotsky's beliefs about the benefits of play. Heppner (2016) noted that play creates opportunities for building cognitive functions, such as reading and writing, when adopted into existing literacy curriculum. Further supporting the impact of play on learning, Ihmeideh (2015) found, in a study of 45 kindergarteners, students that received writing instruction using dramatic play centers produced larger gains in writing development and were more motivated to write for fun than the control group.

Emergent Literacy Development

Research illustrates that early childhood literacy instruction can predict later success (Schryer, Sloat, & Letourneau, 2015). However, home environments where parents provide limited academic experiences often contribute to poor kindergarten readiness (Schryer, Sloat, & Letourneau, 2015). Emergent literacy development begins in preschool and continues through primary school (Schryer et al., 2015; Senechal, 2006; Sukhram, & Hsu, 2012; Theriot et al., 2003; Topping et al., 2013). Exposes students early to language and print positiviely influences the quality of emergent literacy skills developed (Schryer et al., 2015; Senechal, 2006; Sukhram & Hsu, 2012; Theriot et al., 2003; Topping, Dekhinet, & Zeedyk, 2013). According to the National Reading Panel (NRP), learning how to read requires a multitude of instructional tecniques, which encompass principles of letter/sound recognition, phonics, building fluency, developing vocabulary, and story comprehension (Brown, 2014; National Institute of Child Health and Human Development, 2000; National Reading Panel, 2000). Brown (2014) believed

the process of developing emergent literacy in young students requires educators to foster an appreciation for print awareness while supplementing with phonological and phonemic instruction. The final stage of emergent literacy development is phonics instruction (Brown, 2014). Current Common Core Reading Standards: Foundational Skills (k-5) details these skills (Brown, 2014).

Initially, print awareness begins with story book illustrations, helping emergent readers identify unknown words and comprehend stories. Later, emergent readers learn to indentify print as words or phrases that communicate a character's thought or reaction (Brown, 2014). Emergent readers build concepts about print during classroom instruction and structured play activities such as centers, which builds upon their understanding of the use language to communicate (Brown, 2014).

Phonological awareness loosely defined means skills necessary to determine sounds within words (Brown, 2014; Lane, 2007). Initially, students learn how to segment words into syllables with beginnings (onsets) and endings (rimes). With advanced instruction, students learn smaller units of sound (phonemes) make up words, which can be manipulated to create new words and help students identify patterns when reading.

Phonics and word study instruction teaches students associations between letters and sounds, which supports decoding unknown words and building vocabulary (Brown, 2014; National Institute of Child Health and Human Development, 2000). In addition, students begin to develop reading fluency, oral fluency, and story comprehension (Brown, 2014; Stanovich, 1986). Shanahan and Lonigan (2013) believed young students

should be taught phonological awareness in combination to decoding and comprehensions skills to promote future phonics success.

Brown (2014) points out young students come to school with irregular fluency proficiencies based on the amount of spoken language experienced at home. Oral language instruction contributes to an improved grasp of alphabetic principle and structure of spoken language, which is bound to decoding unknown words and reading comprehension (Brown, 2014; Chard, 2005; Pikulski). Although there are many definitions of school readiness, Graue (1993, 2010) and Kagan, Moore, and Bredekamp (1997) define it as, "ready to learn." Although broad in interpretation, the term provides a bridge to exploring universal factors associated with kindergarten readiness such as age as it correlates to developmental stage, appropriate curriculum, expected social skills, and learning environments (Hatcher, Nuner, & Paulsel, 2012).

Kindergarten Readiness

Throughout the United States, entrance into kindergarten usually marks a transitional period where students are immersed into full day academic instruction for the first time. Data collection on students is essential in order to provide educators with baseline data to drive instruction. In addition, kindergarten assessments often prove to be invaluable tool for predicting students' future school success (Goldstein, 2016).

Hull (2012) referred to kindergarten readiness as a prerequisite to students' ability to follow multiple step verbal directions, being engaged in seated activities, taking turns, actively listening, and completing tasks. Educational reforms like Common Core Standards, Race to the Top funding, and No Child Left Behind Act motivated states to

promote more rigorous academic curriculum with higher teacher accountability (Hover, 2015). Some expectations for students entering kindergarten are noted by Goldstein (2007) as having some experience with printed text such as short stories, identifying letters, recognizing letter sounds, and basic writing skills. The effect of play on cogitation and communicating needs or wants is still essential to early childhood success (Callaghan & Madelaine, 2012; Hanline, 1999). Many professionals in the field of early childhood research believe kindergarten readiness hinges upon the acquisition of an academic and social skill set (Cross, & Conn-Powers, 2011). Samiei, Bush, Sell, and Imig (2016) also noted students' prior academic ability and socio-economic status could create experiential differences concerning kindergarten readiness.

Kindergarten readiness prerequisits are subjective topic. Comer and Ben-Avie (2010) noted fine motor, problem solving, self-image, communication, working with others, and understanding right from wrong as essential domains for promoting kindergarten readiness. Comer and Ben-Avie (2010) believed achieving success across each domain requires educators to support students identifing with peers, creating self-images, and developing personal values. The National Institute for Early Educational Research outlined commonly accepted academic indicators for kindergarten readiness:

- Completes activities/tasks;
- works independently;
- listens & retells stories read to them;
- match & sorts objects;
- rhymes words;

- identifies colors, some letters, & numbers;
- understand letters have sounds;
- limited sight words recognition;
- draws pictures and reproduces some letters when writing;
- demonstrates some words have opposites (Palacios, 2016).

Until recently developing an early childhood screening tool produced mixed results because it is understood young students develop vastly inconsistent rates. However, the percentage of New Jersey students ready to enter kindergarten each year is unknown. Although many policy makers representing school districts across New Jersey have begun to adopt the Early Screening Inventory Revised 2008 edition it is not a state mandated assessment. In addition, the tool does not measure academic knowledge.

The Early Screening Inventory Revised 2008 edition developed by Pearson Publishing identifies five measurable areas as indicators of kindergarten readiness (Meisels, Marsden, Wiske, & Henderson, 2008). These areas are language, cognition, perception, and motor coordination (Meisels et al., 2008). Comprehension, verbal expression, reasoning, counting, and recalling auditory sequences activities measures students' language and cognition (Meisels et al., 2008). Block building, drawing, and visual memory activities measure students perception (Meisels et al., 2008). Gross motor activities measure students' coordination (Meisels et al., 2008). The original ESI was pilot tested on over 6,000 students then re-standardized in 2007 (Meisels et al., 2008).

Preschool Legislation

Although universal preschool is not available in New Jersey, providing high-quality early childcare to disadvantaged students continues to be a priority. The 1998 Abbott v. Burke New Jersey Supreme Court decision mandated low-income school districts must provide free high-quality preschool programs (State of New Jersey Department of Education, 2014). New Jersey receives additional funding from the School Funding Reform Act, witch created 84 additional preschool programs in high poverty school districts (Castano, 2014). In 2013, President Obama introduced the Preschool for All Plan, to develop full day preschool for students that meet disadvantaged family criteria (Duncan, 2013a). The following year New Jersey was awarded a Preschool Development Grant to expand preschool access to an additional 17 low-income communities (State of New Jersey Department of Education, 2015; United States Department of Education, 2014).

President Obama's (2013) State of the Union Address suggested low-income families with young students typically begin kindergarten a full year behind other children. President Obama (2013) commented studies on early childhood education show stronger long-term results are achievable when students have access to preschool education. President Obama (2013) noted many disadvantaged families do not have access and many middle-class families cannot afford private preschool. The Preschool for All Plan is a ten-year plan distributing $75 billion towards providing free preschool to all students in families at or below the federal poverty line (Obama, 2013).

The United States Secretary of Education further explained the federally subsidized plan will expand childcare starting at birth until the age of five with additional resources for creating positive home environments (Duncan, 2012). The plan requires states to develop high-quality preschool curriculum aligned to current Common Core Standards (Duncan, 2012). One limitation of President Obama's Preschool for All Plan is that it does not include students from families above the poverty line (McCann, 2013).

Currently, there are six bills in New Jersey designed to improve early childhood education. Specifically, two have the potential for laying a foundation for universal preschool. The Establishment of a Department of Early Childhood bill would assume current responsibilities of Department of Education and oversee all child services from pregnancy to the age of eight (Advocates for Children of New Jersey, 2016). The bill recognizes early childhood education evolution towards a category similar to primary, middle, and high school, which could pave the way for mandated preschool and kindergarten attendance for all New Jersey families. A second bill would mandate full-day kindergarten. Approximately 80% of New Jersey school districts offer full-day kindergarten (Advocates for Children of New Jersey, 2016). The bill would require all districts to participate by 2020 (Advocates for Children of New Jersey, 2016).

Preschool Availability

The demand continues to grow for early childhood care before entering kindergarten. The cultural shift from home childcare to private childcare can be attributed to two movements. Increased cost of living forced otherwise stay at home parent back to work to make ends meet. In addition, many families realize the social and academic

benefits of attending a public or private preschool outweigh initial cost and potential future costs for out of district special services or tutoring in the event that a child falls behind due to not attending preschool.

In 2014, approximately 53% of United States children aged three to four attended a preschool program (Child Trends, 2014). In addition, simular studies estimated approxiamately 70% of preschool aged students attended private childcare (Coley, Votruba-Drzal, & Collin, 2016; Mamedova & Redford, 2015). States initially provided public preschool as a means of early intervention to school districts servicing disadvantaged students. However, research now suggests generalizing the benefits of attending preschool to other populations. Many states have begun to provide universal programs (Gomez-Velez, 2013; Lamy 2013). Universal preschool is government funded early childhood education for all regardless of previously used qualifying characteristics such as economic status or disability (Curran, 2015). Currently, ten states have adopted universal preschool programs (Curran, 2015).

The National Institute of Early Education Research (2014) reported 1.3 million children attended public preschool programs nationwide. The National Institute of Early Education Research (2014) suggested attendance was down by 9,000 students from the previous year due to 2011-2012 budget cuts. As of 2014, the National Institute of Early Education Research reported (2014) approximately 30% of all United States children under 5 attended state-funded preschool programs. In addition, The National Institute of Early Education Research (2014) noted New Jersey's per preschool student cost of $12,157 was the second highest nationally. Many state funded preschool programs only

service disadvantaged children. Hill, Gormley, and Adelstein (2015) suggested the limitations of preschool access create missed opportunities that can later develop into achievement gaps requiring intervention.

In 2015, 30% of children under five and 20% of children under four attended a state-funded New Jersey preschool programs (Barnett et al., 2016). That same year New Jersey's population of preschool students was roughly 639,000 however provided access to approximately 47,000 students (Advocates for Children of New Jersey, 2016). One reason is that New Jersey's residents are primarily middle-class and are ineligable for public preschool. Therefore many families must consider alternative childcare options to promote kindergarten readiness. However, the biggest obsticle for expanding preschool availability in New Jersey is limited funding.

State-Funded Preschool

New Jersey spends annual over $1 billion on funding preschool programs (Castano, 2016). Regardless of the challenge to fund public preschool, attendance continues to grow nationally. During the 1960's, roughly 10% of three and four year old children had attended a childcare type program (Barnett, 2010). In 2015, approximately 30% of three and four year-old children had preschool attendance (Barnett et al., 2016). Public preschool state initiatives support opportunities for all young students to experience high quality early education. A large existing body of research demonstrates that participation in preschool can have meaningful impacts on a host of short- and long-term outcomes.

The work of Barnett (1995) and Yoshikawa et al (2013) demonstrated the benefits of preschool attendance could be generalized to large populations based on their results from a meta-analysis of 84 preschool program evaluations dating back to 1960 (Strang & Pliasta, 2016). Strang and Pliasta (2016) found preschool enhanced students readiness for kindergarten with an effect size of a 0.21 based on cognitive assessments when compared to the control group.

Results from Dice and Schwanenflugel's (2012) quantitative study of 250 children found early literacy skills learned at public preschools was more comprehensive than the maternal education received at home. Further more, Shanahan and Lonigan (2010) noted the benefits of early childhood literacy instruction on alphabetic knowledge and phonemic awareness skills plays a pivotal role in preparing kindergarten students for decoding emergent reader text. The evidence from these and other simluar long-term studies have amassed substantial data suggesting preschool attendance is benifical to disadvantaged children even when followed to the age of 40 (Campbell et al., 2008; D'Onise et al., 2010; Garces et al., 2002; Reynolds et al., 2007; Schweinhart et al., 2005).

The most consistent results of preschool attendance were found on education attainment (Palfrey et al. 2005; Reynolds et al., 2001; Schweinhart et al., 2005) with 7.7-17% more preschool students going on to complete primary school (D'Onise, Lynch, McDermott, 2010). A long-term study of preschool attendance showed a connection to improved high school performance (Grantham-McGregor et al., 2007). Campbell et al. (2002) and Reynolds et al. (2007) reported college attendance was 4.7 to 22% greater when students had attended public preschool (D'Onise et al., 2010). However,

Scharfenberg (2014) argued many policy makers still show resists adopting universal preschool as some studies have shown academic gains begin to fade by third grade.

Critics of universal preschool argue that without substantial research pointing towards consistent long-term benefits, a significant public investment is not justified. Public funding is required to subsidize the cost of preschool even thou the majority of the United State's population are inelgiable due to their middle class status (Bassok, Miller, & Galdo, 2016). However, participants for preschool studies are generaly limited to sampling from one population. Therefore, results can not be generalized to the entire population when considering the benifits of universal preschool.

High/Scope Perry Preschool Program

Schweinhart et al. (1993) studied the effects of preschool attendance on 123 low-income black students from Ypsilanti, Michigan. The study used random assignment to the treatment/control groups then used matching based on IQ, age, and gender (Grehan et al., 2011). The researchers continuously collected data from participants beging at the age of 4 until 27 (Grehan et al., 2011). Intially the treatment group produced higher kindergarten achievement scores than the control group (Grehan et al., 2011). At 5th grade it was noted that requests for special services and grade retention had reduced (Sparks, 2015). Researchers later found the experimental group achieved a 79% high school graduation rate, amassed more wealth, and commited fewer crimes (Grehan et al., 2011). After additional follow-up study on the original participants at the age of 40, researchers found lifetime earnings were approximate $150,000 greater than the control group (Schweinhart, Monti, Xiang, Barnett, Belfield, & Nores, 2005). In addition, the

reduction in crime saved taxpayers $195, 261 per participant (Belfield, Nores, Barnett, & Schweinhart, 2006). Ultimately, High/Scope Perry Preschool Program study is noted for producing a $12.90 return for each dollar spent (Belfield et al., 2006).

Sparks and Moore (2016) were High/Scope Perry Preschool Program teachers that attributed the programs success and the significance of the study's results to six factors. The program's teachers had the freedom to use all available best practices while considering students cultural backgrounds when developing curriculum (Sparks & Moore, 2016). Teachers' attitudes were free of prejudices and misconceptions of the most scientifically advanced curriculum (Sparks & Moore, 2016). In addition, respecting students' backgrounds, believing each student can learn, and celebrating their role in the classroom promoted relationships between teachers and students (Sparks & Moore, 2016). Teachers built trust with the community by valuing the role families played in their child's' education, explored home dynamics, then worked together to bridged any learning gaps between home and school (Sparks & Moore, 2016). Sufficient funding was provided to supply necessary materials and retained highly qualified staff (Sparks & Moore, 2016). Finally, teachers promoted tolerance through academic instruction and social skills training (Sparks & Moore, 2016). Sparks (2016) noted concepts from the High/Scope Perry Preschool Program can be witnessed in early childhood programs around the world (Sparks, 2016).

Chicago Child-Parent Center Program

The 1980's Chicago Longitudinal Study followed 1,539 students' aged 3-9 from low-income households (Grehan et al., 2011). Currently, participants are in their mid-30s.

Although results are comparable to the High/Scope Perry Preschool Program, gains were not as substantial (Reynolds, Temple, & Ou, 2001). The treatment group's high school dropout and crime rate were slightly higher, however still significant when compared to the control group (Lamy, 2013). Reynolds et al. (2001) noted participants from the treatment group were 40% less likely to require referral for special education services (Lamy, 2013).

Cost-benefit analyses of the Chicago Child-Parent Center Program produced a 10:1 return on the dollar based on the initial program investments. Returns were calculated based on increased income, sales tax paid, decreased criminal justice expenses, and reduced use of welfare programs (Lamy, 2013). Analysts estimated the adoption of similar programs could save school districts about 3 percent each year on budget expenses (Belfield, 2004).

The Chicago Child-Parent Center program was adopted in 1967 and continues to receive title I funding (Chicago Longitudinal Study, 2016). The program became a federally funded longitudinal study in 1986 (Chicago Longitudinal Study, 2016). Based on the program's ability to replicate increased student achievement while promoting family involvement it received a five year expansion grant in 2011 (Chicago Longitudinal Study, 2016). The program is currently being replicated in additional districts within Illinois, Minnesota, and Wisconsin with similar results (Chicago Longitudinal Study, 2016).

Carolina Abecedarian Project

The Abecedarian Project study used four randomized groups assigned to intervention and control groups consisting of 123 African American students born between 1972 through 1977 (Abecedarian Project, 2016). The preschool program followed a half day schedule and nine month calendar (Campbell et al., 2012). Students admitted into the preschool program demonstrated IQ levels between 65-90 (Campbell et al., 2012). The treatment group was given the opportunity to attend the program at six weeks after birth until entering kindergarten or age 5 (Campbell, et al., 2012). A follow-up at the age of 21 found the treatment group maintained a statically significant advantage in academic assessments and had a 35% greater chance of attending college when compared to 14% for the controlled group (Campbell et al., 2001).

Based on the significance of the initial findings a follow up study tracked particpants as adults from the age of 25-40 to measure the extent to which the program may have affected their quality of life (The Carolina Abecedarian Project, 2016). The effect size was calculated for outcomes to compare the treatment to the same metric and determine its effect on the educational, economic, and social-emotional domains to control for a type I error (Campbell et al., 2012). Educational outcome for the treatment groups produced 13.46 years of education per participant with 4.6% attending college and 12.31 years per participant for the control groups (Campbell et al., 2012). Economic outcomes for the treatment groups produced 75% full time employment per particiant and 53% full time employment per participant for the control groups (Campbell et al., 2012).

In addition, Campbell et al. (2012) found the control groups had a six time greater chance to apply for public assistance then the treatment group.

Campbell et al. (2012) suggested education attainment results from the long term Perry Preschool, Boston Preschool, and Chicago Child-Parent Centers studies were consistent with the Abecedarian study. Although high school graduation rates were not significantly greater for the treatment groups, the Abecedarian study was the first to specify the level of post-secondary educational attainment (Campbell et al., 2012).

Although, the results from Abecedarian follow up study are comparable with the significance of the previously mentioned research the ability to generalize results to a national preschool population is limited due to sampling from a single demographic.

Boston Public Schools

In 2005, Boston Public Schools board of educaiton began to allow 4 year olds that live within the district to enroll for full day preschool regardless of family income (Sachs & Weiland, 2010). Currently, the Boston Public Schools system provides 2,400 seats for incoming four year olds, limited seating for three year olds, and free before and after care (Boston Public Schools, 2016).

The results from studies previously mentioned in my literature review supported Boston public school policy makers' decision to adopt universal preschool (Sachs & Weiland, 2013). Eight years after Boston began providing universal preschool, a Harvard University study reported student achievement on beging of the year kindergarten assessments ranked the treatment group seven months ahead in literacy and math then student that did not attend the program (Yoshikawa et al., 2013). Prompting an internal

study that analyzed results from Dynamic Indicators of Basic Early Literacy Skills. Researchers from the school district reported that students eligible for the preschool program based on meeting criteria for free or reduced meals achieved higher results than students not eligible (Boston Public Schools, 2014).

The Brookings Institution commented that although the Boston preschool program produces significant results, additional funding remains the subject of federal criticism (Scharfenberg, 2014). Currently, Boston services half of its preschool population due to a lack of infrastructure and funding (Scharfenberg, 2014).

Sachs and Weiland (2010) acknowledged Boston's ability to provide high-quality professional development for teachers, creating an academically driven curriculum, promoting teacher collaboration, offering competitive pay, and actively recruiting high-quality candidates suggests their preschool program could be an excellent model for other school districts. However, the program spends per student approximately $15k annually, which ranks Boston one of the highest in the nation (Haskins, 2016).

Tennessee Voluntary Prekindergarten Program

In 1963, Tennessee passed legislation to allocate federal and local funding for a public preschool program (Grehan et al., 2011). However, it was not until 1990 that the state realized there was enough research to suggest preschool attendance produces significant long-term results (Grehan et al., 2011). In 2005, the Voluntary Preschool for Tennessee Act allocated $25 million to expand the program to service an additional 3,000 eligible students (Tennessee Department of Education, 2016). In addition, the program provided access to high quality preschool to students' eligible free or reduced meals and

met the age cutoff date (Grehan et al., 2011). Any student that met the age requirement was also eligible to fill remaining vacancies.

To receive the additional funding new regulations were adopted to ensure classroom practices were standardized across the state. Classrooms now could not exceed 20 pupils, must provide instruction from a licensed early childhood educator, and teacher assistant with an early childhood associate degree (Grehan et al., 2011). Student received 5.5 hours of instruction aligned to state standards per day (Grehan et al., 2011). In addition to providing opportunities for cognitive, physical, emotional, social, and communication development (Grehan et al., 2011). During the 2008-2009 school year, Tennessee's preschool programs received $85 million due to a growing demand and limited infrastructure (Grehan et al., 2011). That same year Tennessee passed legislation to allow preschool administrators to collaborate with nonprofit and for-profit agencies such as Head Start, to expand access to an additional 205 classrooms across 37 school districts (Grehan et al., 2011). During the 2013-2014 school year, over 18,000 students were enrolled in Tennessee's preschool program (Tennessee Department of Education, 2016).

In the 2010 Third Interim Report Grehan et al. (2011) found students that attended Tennessee's preschool program outscored students that did not on kindergarten standardize tests. Grehan et al. (2011) used a random effects model that controlled for free or reduced lunch eligibility, student ethnicity, gender, special education, retention, attendance rate, and primary language. Although, long term differences in preschool attendance were explored, Grehan et al. (2011) reported gains were not evident after

Grade 2. However, Grehan et al. (2011) noted economically disadvantaged students reading scores remained higher through third grade. Grehan et al. (2011) concluded that the Tennessee's preschool program successfuly closes inequality gaps.

In a more recent Farren and Bilbrey (2014) study, used a randomized control group of160 preschool classrooms to observe variations in program implementation. The Farren and Bilbrey (2014) data collection included results from the Early Childhood Environment Rating Scale, Early Language assessment, Literacy Classroom Observation assessment, in addition to narrative record keeping. Mean scores from the three measures did not produced signifcant results. Farren and Bilbrey (2014) concluded implementing statewide public preschool present many challenges (Farren & Bilbrey, 2014). However, a Lipsey (2014) study, used a randomized control tail design to include the entire preschool population, approximating 3,000 pupils. Lipsey (2014) reported a statistically significant differnce after analyzing results from the kindergarten teacher ratings' measure of readiness and work related skills assessment used to measure kindergarten readiness.

New Jersey Title I Preschool Programs

Title I preschool programs provide kindergarten readiness instruction to families of three and four year olds at or below the poverty line or have an individual education plan (IEP) (Grehan et al., 2011). Often existing public schools provide classroom space for preschool. However, when nessary due to limited space satellite locations such as neighborhood childcare centers, or Head Start schools accommodate enrollment (Barnett, Jung, Young, & Frede, 2013; Grehan et al., 2011). In addition, Title I schools provide

free before care, half/full day preschool, after care to 43,000 students across 31 New Jersey school districts (Barnett et al., 2013; Grehan et al., 2011).

A Schippers (2014) study suggested children that demostrate kindergarten readiness maintain their advantage while unprepared children remain at a disadvantage. Frede, Jung, Barnett, and Figueras (2007) studied kindergarten performance after atttending one and two years of Title I preschool. Frede et al. (2009) measured oral language, reading and writing skills using a regression discontinuity model. The study produced some positive results prompting a longitudinal follow-up. At the end of kindergarten Frede et al. (2009) assessed the students oral language and conceptual knowledge. Frede et al. (2009) reported an .18 effect size. More interestingly, Frede et al. (2009) reported students with two years of preschool attendance produced an effect size of .38. An additional follow up at Grade 2 produced a .22 effect size for the one year of preschool attendance group and a .40 effect size for the two years of preschool attendance group (Frede et al., 2009). In addition, Frede et al. (2009) acknowledged that nearly all participants met the national average for language arts standardized testing.

Frede et al. (2009) reported grade retention was down to 5.3 percent when compared to the control groups 10.7 percent, eloquently illustrating the economical impact of disadvantaged students attending title I preschool (Frede et al., 2009). Barnett et al. (2013) follow up study at Grades 4 and 5 found the one year of preschool attendance group closed achievement gaps between students not eligible for the title I preschool by approximately 10-20 percent. Further more, participants in the two years of preschool attendance group closed gaps approximately 20-40 percent (Barnett et al.,

2013). The National Institute for Early Education Research subsiquently reported students from the two years of title I preschool attendance group were approximately a full year ahead academically than students from simular sociol economic backgrounds that did not attend title I preschool at Grade 4 and 5 (Mooney, 2013). In addition, Mooney (2013) concluded the title I preschool attendance group had not been held back with frequency and required less special education intervention.

In 2008 New Jersey approved the School Funding Reform Act, which aimed to expanded the preschool day (Rice, 2013). However, a quick internet search revealed only 4 out of the 678 school districts received funding. A survery administered by researchers from Advocates for Children of New Jersey suggested that 85% of the approximately 100 school districts currently receiving title I preschool funding have requested additional resources based on increased enrollment (Rice, 2013). In addition, 55% reported full day preschool was not feasible due to increased enrollment and provide two half-day sessions to accommodate (Rice, 2013). In 2015, 29% of New Jersey's four year olds and 19% of 3 year olds attended a title I preschool (Barnett et al., 2016).

Common Core State Standards Initiative

New Jersey does not provide universal preschool and kindergarten attendance is not mandated. Fortunantly, Juel (1988) realized this structure of education creates long-term gaps linked to later reading failure. In a attempt to marginalize the potential for academic failure common core state standards were roled out based on results of high stakes testing. Therefore, shufling the respondsibility of academic accountability from parents towards the educator and school system. In a coordinated initiative the National

Governors Association Center for Best Practices and Council of Chief State School Officers created the common core state standards with the expressed intention of bolstering the United States education system as a competitor globally (Baker et al., 2015). Then president Obama's initiative, Race to the top funding persuaded states such as New Jersey to adopted common core state standards in every school in exchange for additional federal funding (Jochim & McGuinn, 2016). Interestly, states were already independently implemented academic standards since the early 1980's (Kornhaber, Barkauskas, & Griffith, 2016). Critics common core state standards argue standardizing national learning outcomes creates unmeaninful performance indicators for measuring student achievement and diminish opportunities for more real world learning (Endacott & Goering, 2014).

In an attempt to close gaps in early childhood educational, the United States Department of Education allocated additional funding to states willing to develop academic standards for preschool (Hatcher, Nuner, & Paulsel, 2012). New Jersey subsiquintly proposed to the federal government early childhood standards in 2000. However, before states adopted common core standards, learning outcomes were the discretion of professional preschool educators (Fajgier, 2012). Initially, there were no guidelines for how to achieve early childhood standards. Therefore, many preschool teacher felt pressured to achieve goals with no plan of implemenation and soon after began to use proven unreliable practices such as direct instruction and rote memorization (Nitecki & Chung, 2013).

In an attempt to regulate measurable outcomes for commom core standards, the Race to the Top initiative was introduced and labeled as a fund aimed at recognizing career readiness begins in preschool. States received up to $500 million for developing preschool guidelines for implementation pre-k standards based on current national k-12 common core standards (Zubrzycki, 2011). The New Jersey State Department of Education revised preschool standards again in 2013 to align with existing K-3 standards (New Jersey State Department of Education, 2014). In addition, an Approach to Learning section or guideline for implemenation was included to satisfiy Race to the Top funding requirements (New Jersey State Department of Education, 2014). Soon after the National Institute of Early Education Research (2014) awarded New Jersey's title I preschool program an 8.8 out of a possible 10 for quality of standards.

The cultural shift in early childhood literacy has gained national recognition (Gettinger & Stoiber, 2012; Hatcher, Nuner, & Paulsel, 2012; Wat, 2010). From preschool through third grade, there are now six continuous ELA standards, which require varying degrees of mastery (Common Core State Standards Initiative, 2016). The common core national standards were not designed to be curriculum, but rather a framework of specific learning outcomes (Baker et al., 2015). School districts are free to develop curriculum aligned to these standards (Baker et al., 2015).

Although, Ackerman and Coley (2012) argued preschool students developed at vastly different rates than any other grade, which can make assessment inconsistent. Research continues to suggest under the right circumstances preschool attendance produces long term academic gains. However, New Jersey policy makers remain

reluctant to fund universal preschool programs and without a national plan to connect Common Core k-12 to preschool curriculum effects will continue to vary.

Summary and Conclusions

The work of Barnett (1995) and Yoshikawa et al. (2013) demonstrated the benefits of preschool attendance could be generalized to large populations. New Jersey title I preschool programs provide early intervention to disadvantaged and at-risk students. Skeptics of universal preschool argue the cost outweighs potential results. Childcare expenses for New Jersey's middle class in 2014 were estimated at 20 percent of household budgets while median incomes have declined by 8% from 1989 to 2013 (Castagno, 2014; Erickson, 2014). To look at the bigger picture, 81% of three year olds and 71% of four year olds in New Jersey do not have access to public preschool (National Institute for Early Education Research, 2015). Common Core Standards have imposed rigorous academic expectations for early childhood education with intensified attention on accountability (Lasser & Fite, 2011) without the support of universal preschool. Results from studies simular to the High/Scope Perry, Chicago longitudinal, Tulsa, and Boston universal preschool suggest students with experience outperform students without. However, little is understood about how public, private, or no preschool attendance effects kindergarten literacy achievement in New Jersey for populations outside of inner city demographics. Chapter 3 contributes to a greater understanding of a potential gap and provides new analysis and discussion of a demographically diverse sample representative of an entire population.

Chapter 3: Research Method

The purpose of this quantitative study was to determine if a statistical difference existed among kindergarten literacy gain scores between students who attended public, private, and no preschool. In Chapter 3, I discuss the demographics of the research site, the appropriateness of research design selected, and the target population. I also discuss the procedures I used for sampling, the nature of treatment, and the nature of archived data collection. Last, I explain my data analysis plan, threats to validity, and ethical issues as they relate to institutional review board approval.

Research Design and Rationale

The independent variable, preschool attendance, was divided into three groups. Group 1 included students that had attended public preschool. Group 2 included students that had attended a private preschool. Group 3 included students that had no preschool attendance. The dependent variable was kindergarten literacy gain scores with the gain being between two administrations of the same Fountas and Pinnell Benchmark Assessment System (BAS) at the beginning of January and end of May of the 2016-2017 school year.

A lack of both random assignment and manipulation of treatment merited the use of a quasi-experimental design (Belli, 2009). The study's reliance on archived data on three groups that had already received a treatment necessitated the use of an ex-post facto 1x3 factorial design. There were no time or resource constraints to using this design because the data set was archived. The use of a true experimental design in this study was not possible due to the fact that the treatment, in this case the administration of the

assessment, had already occurred and participants' placement could not be manipulated. Therefore, a quasi-experimental 1x3 factorial design is the best fit to hypothesis test the effect of an independent variable with three groups on a single dependent variable. In addition, the use of an expo-post facto design is common practice for determining the effect of multiple treatments on a single dependent variable in educational. Lord (1973) suggested the use of pre-existing groups is a common practice in educational research.

Methodology

Population

The target population included all students from two schools in the same district in New Jersey that had completed kindergarten during the 2016-2017 school year. The sample size was 100 students. Site 1 is a Title I school with an average annual enrollment of 60 kindergarten students. Site 2 is a Title I school with an average annual enrollment of 40 kindergarten students.

Site 1 is a Title I school with 18% of its total population receiving free or reduced meals. The ethnicity of Site 1 was 87% White, 8% Hispanic, and 5% other. The gender ratio male to female was approximately 50%. In addition, the age of the data set ranges from 5 to 6 years old. Site 2 was also a Title I school and 39% of its total population receives free or reduced meals. Site 2's ethnicity was 81% White, 9% Hispanic, and 10% other. The gender ratio for males was 52% and females 48%. The age range for the sample was also between five and six years old. The sample used for this study represents approximately 15% of the total kindergarten population in the school district. Participants

were classified into three groups: public preschool attendance (n = 29), private preschool attendance (n = 48), and no preschool attendance (n = 23).

Sampling and Sampling Procedures

The statistical power analysis G* Power 3.1 was used to calculate the minimum sample size for the F test one-way ANOVA with an effect size of .32, .05 standard deviation, and power set to .80 for three groups, resulting in a minimum sample size of 99 participants. The use of a .32 effect size and power set to .80 is common in educational research. The sample included all students from two sites that completed kindergarten for the 2016-2017 school year. A sample of 100 participants was used. Administrators from the two sites provide unidentified data sets for all samples.

Procedures for Recruitment, Participation, and Data Collection

Data analysis relied on archived data and there was no need for recruitment for participants. Because the treatment had already occurred, there was no need for additional instruments to collect data.

Archival Data

Administrators from each site provided de-identified data sets. Data sets were merged to create a single document for 100 unidentifiable samples listing only results for type of preschool attendance and kindergarten gain scores. I gained access to the archived data sets by providing the school district with anapproved copy of my study's proposal, received the district's board of education approval to conduct the study, acquired signed data usage agreements from principals at both schools providing the data, and obtained Institution Review Board approval (04-04-17-0401818).

Instrumentation and Operationalization of Constructs

Archived data for the independent variable was collected from the Fountas and Pinnell Benchmark Assessment System. The instrument was published in 2010 and developed by Irene C. Fountas and Gay Su Pinnell. The Benchmark Assessment System measures kindergarten students' "decoding, fluency, vocabulary, and comprehension skills" (Fountas & Pinnell, 2012). The Benchmark Assessment System (BAS) is the district's primary kindergarten literacy assessment. Participants of the BAS field tests consisted of 498 students from 22 elementary and middle schools from diverse socioeconomic locations across the United States (Fountas & Pinnell, 2012).

Test-retest reliability of students' reading scores from the BAS's fictional and nonfiction books series produced a coefficient of .93 and confirmed scores across tests are consistent (Fountas & Pinnell, 2012). Convergent validity was used to measure the strength of BAS scores to results of similar products, which found correlations of .93 for fiction and nonfiction scores compared to the Reading Recovery program (Fountas & Pinnell, 2012).

The operational variables were calculated as single item scores. The independent variable for the research question was preschool attendance and measured on a 3-point categorical scale as, 1 = *no attendance*, 2 = *attended private preschool*, and 3 = *attended public preschool*. The dependent variable, kindergarten BAS gain scores, was measured at two points in time using a 4-point interval scale as 1= *does not meet expectations*, 2 = *approaching expectations*, 3 = *meets expectations*, and 4 = *exceeds expectations*.

Data Analysis Plan

I used the software program IBM SPSS Statistics version 24 for data analysis. I screened the data by crosschecking distribution tables with original data set. I examined the research question named below. A directional alternative hypothesis was used because there was enough empirical research to suggest preschool attendance has a positive effect on early childhood literacy development.

What is the difference in Kindergarten literacy gain scores as measured by the Fountas and Pinnell Benchmark Assessment between students who attended public, private, and no preschool?

H_0*:* There is no difference in kindergarten literacy gain scores as measured by the Fountas and Pinnell Benchmark Assessment between students who attended public, private, and no preschool.

H_1 Students who attended preschool show higher kindergarten literacy gain scores as measured by the Fountas and Pinnell Benchmark Assessment then students who did not.

A test of statistical power determined the sample size required to accurately and reliably interpret results. I used descriptive statistics to compare mean scores between an independent variable with three groups on a single dependent variable. Hypothesis testing, estimating confidence intervals, and calculating effect size determined the samples scores represented the population. Based on Creswell (2012) I decided to use a one-way ANOVA due to the research question proposing a group comparison, a categorical independent variable, a single interval dependent variable being present, and

normal distribution. Based on an abundance of research supporting the fact that preschool attendance improves literacy scores, an alternative hypothesis using a one-tailed test of significance was recommended(Creswell, 2012). Educational research typically uses a p-value of .05 to determine if the null hypothesis can be rejected. The degrees of freedom of the numerator are the total number of groups for the independent variable subtracted by 1. The degrees of freedom for the denominator are the total number of participants subtracted by 10. The confidence interval was set to 95% during initial data analysis to indicate the strength of mean scores if a statically significant difference was found between the variables. Creswell (2012) suggested a .5 standard deviation effect size for comparing the mean of three groups. The effect size indicates the level of difference found between variables.

The following assumptions were met to run a one-way ANOVA. There was a continuous dependent variable, a categorical independent variable with three groups, and independence of observations. There were no outliers assessed by the boxplot. The Shapiro-Wilk's test for normality produced scores below $p > .05$ for all three categories of the independent variable. Although scores from the Shapiro-Wilk's test suggest data was not normally distributed due to the sample size being greater than 50, a Normal Q-Q Plot was referenced, suggesting a normal distribution. Homogeneity of variances was present and assessed by Levene's test for equality of variances ($p = .811$).

Threats to Validity

The study followed a quasi-experimental ex-post facto design and assumed that the researcher did not interact with the control or treatment of groups because they had

already occurred. The use of an archived data set eliminated any threats to internal validity. The quasi-experimental design lacked random selection of participants. Matching participants to three groups controlled for any threats to external validity such as confounding variables and support generalizing results to larger populations.

There are no threats to construct validity for the dependent variable's measure because it is a published pre- and posttest instrument used throughout the entire state. There are no threats to construct validity for the public preschool group because all participants received half-day instruction from state certified staff using standardized curriculum. Threats to construct validity of the private preschool group is that it is unknown if programs attended were half-day or full day. In addition, the type of curriculum, qualifications of staff, and class sizes experienced by students is unknown because private preschool centers are independent businesses and are not regulated by the state. Threats to construct validity to the no preschool group is that it is unknown if students received any academic instruction and, if academic instruction was received, it is unknown what type and for how long each day. In addition, the level of education of the caregiver is unknown.

Ethical Procedures

To ensure the rights and privacy of participants, I obtained Institutional Review Board approval before receiving an archived data set. The Institutional Review Board approved my request to receive an archived data set if I obtained signed data usage agreements from the principals of both schools, and the district's board of education approval. Site administrators de-identified the data set. All data was stored on a single

computer owned by me that is password protected. All data will be maintained for 5 years and then destroyed. Results will only be shared with the district. There are no risks to participants associated with this study because of the use of a de-identified archived data set and merits the opportunity to pursue new knowledge. I identified all potential risks and used procedures to minimize risks.

Summary

In Chapter 3, I detailed the setting of the data collection site. I identified the study's variables and explained how the use an ex-post facto 1 x3 design was the best fit. In addition, I discussed the target population and rationale for the selection of a published data collection instrument. I reported published results for reliability and validity for the instrument. The process for selecting a data analysis program and procedures for hypothesis testing were discussed. There are no threats to validity and all ethical procedures required by the Institutional Review Board were. In Chapter 4 I discuss the reliability of administering the study's data collection plan, validity of the target population and results.

Chapter 4: Results

The results from my quantitative study determined a statistical difference between kindergarten literacy gain scores and type of preschool attended exist. The research question was aligned to measuring 2016-2017 literacy gain scores for kindergarten students with public, private, or no preschool attendance. The null hypothesis was written to state there is no difference in kindergarten literacy gain scores between students who attended public, private, and no preschool. A directional hypothesis described preschool students would showed higher kindergarten literacy gain scores then students who did not.

In Chapter 4 I discussed the period of data collection, reported demographic characteristics of the sample, and how they relate to the population being studied. Finally, results from hypothesis testing were presented through descriptive statistics, one-way ANOVA analysis, and post-hoc testing.

Data Collection

The period for data collection was approximately 2 months. The process required receiving initial Institutional Review Board approval, obtaining board of education approval, and signed data usage agreements from the two data collected sites. Upon receiving Institutional Review Board and board of education, principals frob both two sites provided de-identified data sets. Both data sets only included 2016-2017 kindergarten literacy scores and type of preschool attended. I then merged both data sets into a single SPSS table.

The merged data set produced 100 complete samples. The data set did not include individual ethnicity, gender, or age of samples. The sample represented 15% of the district's entire kindergarten population. Covariates were not included in the design of this study.

Results

As shown in Table 3, I used descriptive statistics to determine the dependent variable literacy gain scores had an average value of $M = 1.22$ ($SD = .85$). A one-way ANOVA analysis determined the difference in kindergarten literacy gain scores for groups with different preschool experience. Participants were classified into three groups: public preschool attendance ($n = 29$), private preschool attendance ($n = 48$), and no preschool attendance ($n = 23$). Gain scores were significantly different between preschool attendance groups at the $p < .05$ level for the three conditions, $F(2, 97) = 7.710$, $p = .001$, $\eta^2 = .13$. Results from running a pairwise comparison found an increase in gain scores from the no preschool attendance group ($M = .65$, $SD = .71$), to private preschool attendance group ($M = 1.33$, $SD = .85$), with a statistically significant mean increase of .68, $p = .001$. In addition, the comparison produced an increase in gain scores from the no preschool group ($M = .65$, $SD = .71$) to the public preschool attendance group ($M = 1.48$, $SD = .78$), with a statistically significant mean increase of .83, $p = .000$. There was no statistical differnce between the private and public preschool attendance groups ($p = .433$). Figure 2 illustrates the estimated marginal means for the multivariate data set. I rejected the null hypothesis due to group means being significantly different ($p < .05$) based on preschool attendance.

Table 3

Mean and Standard Deviation on the Measure of Kindergarten Literacy Gain Scores Between Type of Preschool Attended

Preschool Attendance	*n*	*min*	*max*	*M*	*SD*
None	23	.00	2.00	.65	.71
Private	48	.00	3.00	1.33	.85
Public	29	.00	3.00	1.48	.78

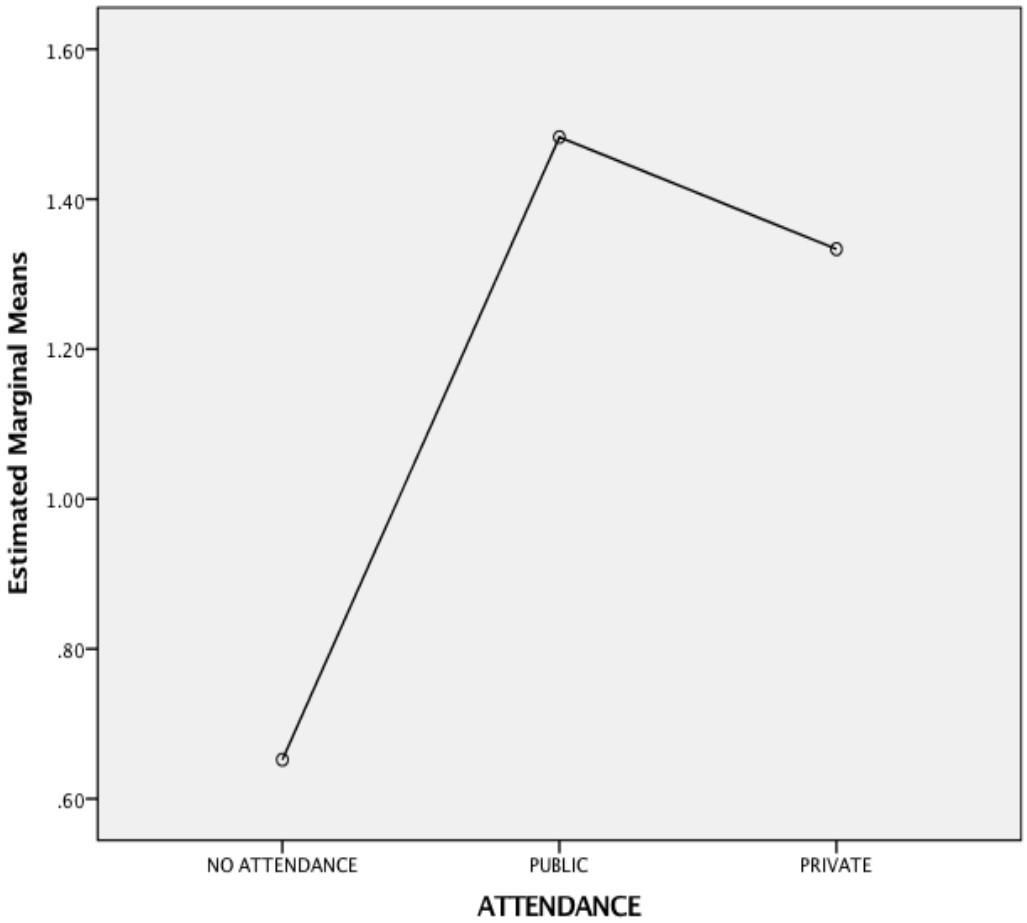

Figure 2. Estimated marginal means of gain scores in student achievement.

Summary

I found that results from the one-way ANOVA analysis produced a statically significant difference between the means of kindergarten gain scores for the public, private, and no preschool groups. Additional post hoc testing produced a statistical differences between the samples with no preschool and both types of preschool attendance. Therefore, the null hypothesis was rejected. In Chapter 5 , I discuss the results, generalization, limitations, potential to promote positive social change, and recommendations for further research.

Chapter 5: Discussion, Conclusions, and Recommendations

The study determine a statistical difference existed between three types of preschool experiences on kindergarten literacy gain scores. The use of an archived data set and nature of assessment instrument necessitated an ex-post facto pre- and posttest design was the best fit. Data analysis produced a statically significant difference in literacy scores between the three groups, indicating that public and or private preschool attendance can lead to significantly higher literacy scores in students compared to no preschool attendance.

Interpretation of the Findings

Sociocultural and emergent literacy theory explain children develop cognitive functions when they interact with knowledgeable adults during culturally appropriate actives such as oral and written language (Teale & Sulzby, 1986; Vygotsky, 1978). The results of this study support both theories by suggesting there may be a greater chance that young children develop cultural tools, such as literacy, earlier when given the opportunity to interact with professionally trained educators. In addition, results confirm various preschool program studies, which found statistically significant differences between students with preschool experience and without when measuring kindergarten readiness (Carolina Abecedarian Project, 2016; Chicago Longitudinal Study, 2016; Frede et al., 2007, 2009; Grehan et al., 2011; Yoshikawa et al., 2013).

Although a significant difference in mean scores between the private and no preschool group was present, a comparison between the private and public preschool groups was not significant, even though the quality of education received at private

preschool centers is not standardized. It is the discretion of private preschool centers to determine the level of education and experience of its staff, the type of curriculum taught, which academic assessments are given, thesizes of classrooms, and last, the services for students with special needs is not guaranteed. However, results from this study suggest private centers are striving to remain competitive with public institutions. Although many private centers do not make their policies publicly available, many are instituting similar academic practices.

Limitations of the Study

The study's sample is not representative of the entire state. In addition, the sample is not representative to the entire country and international populations. The study only compared preschool attendance to literacy mean scores, however there may also be differences in other domains assessed in kindergarten.

Recommendations

At first glance, this study may seem like a common topic. However, nationally, 53% of the population are middle class and 44.8% of New Jersey's over 3 million households are middle-class (Mele, 2010; United States Census Bureau, 2015b). In addition, childcare expenses for the middle-class in New Jersey in 2014 were estimated at 20% of household budgets, while median incomes have declined by 8% from 1989 to 2013 (Castagno, 2014; Erickson, 2014). Due to Title I regulations in New Jersey, this means that roughly 81% of three year olds and 71% of four year olds in New Jersey do not have access to public preschool (National Institute for Early Education Research, 2015). Although results suggest attending any form of preschool supports improved

kindergarten readiness, interested parties should consider that public schools are regulated by state governments and thus the academic experiences can be nearly universal, however the quality of a private preschool experience is at the discretion of their administrators.

Implications

Results from this study suggest that a possible cause for decreased literacy development during kindergarten may be linked to limited experience attending preschool. Preschool attendance prepares students to be able to learn in a classroom environment by teaching acceptable behaviors. Students lacking preschool experience may require more instructional time devoted to intervention in order to be prepared to receive literacy instruction. In addition, instructional time lost for remediation may increase students' risk of not meeting emergent literacy benchmarks by the end of kindergarten.

Vygotsky believed that people have basic cultural needs such as learning how to use oral and written language to communicate, which can only be taught by a more knowledgeable other. However, this study's results suggest that waiting to teach students until kindergarten negatively impacts independent reading scores, creates a need for intervention, and loweres over all academic competitiveness with students that attended preschool. In addition, previous research has also suggested that the costs associated with universal preschool could be off-set by producing adults with higher lifetime earnings and thus,less dependency on welfare programs, and lower demand for law enforcement.In order for all children in the United States to have access to preschool, a cultural change is

necessary. The results of this study can help inform families' regarding early childcare decisions,empower policy makers seeking early intervention, and contribute to the growing body of research acknowledging the positive effects of preschool attendance.

Conclusion

The adoption of preschool common core standards to New Jersey school curriculum is relatively new. Universal preschool is not mandated in every state. Each state develops guidelines for preschool standards. New Jersey's preschool program is mandated to service students with learning disabilities and or qualify for free or reduced school meals. The majority of studies on the effects of preschool attendance used samples that qualify for free or reduced meals, which can be generalized to approximately 30% of all five year olds across the United States (National Institute for Early Education Research, 2014). However, benchmarks continue to increase the expectations of students and teachers. Without academic prerequisites for entering kindergarten, the potential success of a classroom remains largely unknown until assessed. A decade of teaching special education kindergarten informed this study and has shown me that although there is limited research on the effectiveness of standardized education, professionally run preschool programs likely produce a positive return on dollars spent because students are better prepared to succeed in kindergarten and life.

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Appendix A: Data Set Template

Students	F&P Pre-Test	F&P Post-Test	Preschool Attended
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Appendix B: F&P and Preschool Conversion Chart

F&P Scores	Conversion Score	Preschool Attendance	Conversion Score
A	1	None	1
B	2	Private	2
C	3	Public	3
D	4		
E	5		
F	6		
G	7		
H	8		
I	9		
J	10		